Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method of detecting a position of a rotation axis of a suction nozzle of an electric-component mounting apparatus, the suction nozzle holding, by suction, an electric component, and being rotated about the rotation axis thereof to rotate the electric component held thereby, so that the electric component rotated is mounted on a component-mounting surface of a circuit substrate, the method comprising the step of:

detecting, on a position-detecting plane including the component-mounting surface of the circuit substrate, the position of the rotation axis of the suction nozzle.

2. (Original) A method according to claim 1, wherein the step of detecting the position comprises

lowering the suction nozzle taking a substantially vertical posture, to position the suction nozzle at an image-taking position where a lower end surface of the suction nozzle is substantially level with the component-mounting surface of the circuit substrate,

taking, with an image-taking device, a first image of the lower end surface of the suction nozzle positioned at the image-taking position,

rotating, at least one time, the suction nozzle about the rotation axis thereof by a predetermined angle,

taking, with the image-taking device, a second image of the lower end surface of the suction nozzle rotated by the predetermined angle, and

processing the first image and the second image, to determine the position of the rotation axis of the suction nozzle.

3. (Currently Amended) A method according to claim 1, wherein the step of detecting the position ~~comprises steps of:~~ comprises:

preparing a calibration member having, substantially on the position-detecting plane, a support surface and at least one first positioning reference,

placing, on the support surface, a calibration gauge having at least one second positioning reference,

taking, with an image-taking device, a first image of the first positioning ~~image~~ reference and the second positioning ~~image,~~ reference,

holding, with the suction nozzle, the calibration gauge to move the gauge off the support surface,

rotating the suction nozzle holding the calibration gauge, about the rotation axis of the nozzle, to rotate the gauge by a predetermined angle,

placing, with the suction nozzle, the calibration gauge rotated by the predetermined angle, on the support surface,

taking, with the image-taking device, a second image of the first positioning ~~image~~ reference and the second positioning ~~image,~~ reference, and

processing the first image and the second image, to determine a relative position between a reference point of the calibration member and the position of the rotation axis of the suction nozzle.

4. (Previously Presented) A method according to claim 3, wherein the step of detecting the position comprises repeating, at least one more time, the step of holding the calibration gauge, the step of rotating the suction nozzle, the step of placing the calibration gauge, and the step of taking the second image, and wherein the step of processing the first and second images comprises processing the first image and at least two second images to determine the relative position between the reference point of the calibration member and the position of the rotation axis of the suction nozzle.

5. (Currently Amended) A method of detecting a position of a rotation axis of a suction nozzle of an electric-component mounting apparatus, the suction nozzle holding, by suction, an electric component, the mounting apparatus including a fiducial-mark- image taking device that takes an image of at least one fiducial mark provided on a circuit substrate, determining, based on the taken image, a position of the circuit substrate, moving, according to the determined position, the suction nozzle holding the electric component, and rotating the suction nozzle about the rotation axis thereof to rotate the electric component to a predetermined angular position, so that the electric component taking the predetermined angular position is mounted at a predetermined position on a component-mounting surface of the circuit substrate, the method comprising the steps of:

preparing a calibration member having a support surface parallel to the component-mounting surface, and having at least one first positioning reference,

placing, on the support surface, a calibration gauge having at least one second positioning reference,

taking, with the fiducial-mark-image taking device, a first image of the first positioning ~~image~~ reference and the second positioning ~~image,~~ reference,

holding, with the suction nozzle, the calibration gauge to move the gauge off the support surface,

rotating the suction nozzle holding the calibration gauge, about the rotation axis of the nozzle, to rotate the gauge by a predetermined angle,

placing, with the suction nozzle, the calibration gauge rotated by the predetermined angle, on the support surface,

taking, with the fiducial-mark-image taking device, a second image of the first positioning ~~image~~ reference and the second positioning ~~image,~~ reference, and

processing the first image and the second image, to determine a relative position between a reference point of the calibration member and the position of the rotation axis of the suction nozzle.

6. (Previously Presented) A method according to claim 5, further comprising repeating, at least one more time, the step of holding the calibration gauge, the step of rotating the suction nozzle, the step of placing the calibration gauge, and the step of taking the second image, and wherein the step of processing the first and second images comprises processing the first image and at least two second images to determine the relative position between the reference point of the calibration member and the position of the rotation axis of the suction nozzle.

7. (Original) A method according to claim 6, wherein at least one of the calibration member and the calibration gauge has a plurality of reference marks which are provided in a surface thereof and which provide a corresponding one of said at least one first positioning reference and said at least one second positioning reference.

8. (Original) A method according to claim 7, wherein the calibration gauge has a plurality of reference holes which are formed through a thickness thereof and which provide the plurality of reference marks.

9. (Original) A method according to claim 7, wherein the calibration gauge has at least two groups of reference marks including a first group of reference marks that are distant from each other by a first distance, and a second group of reference marks which are distant from each other by a second distance different from the first distance.

10. (Original) A method according to claim 7, wherein the calibration member has an upper surface level with an upper surface of the calibration gauge, and has the plurality of reference marks on the upper surface thereof.

11. (Currently Amended) A method according to claim ~~1,~~ 5, further comprising a step of applying a negative pressure to the calibration gauge placed on the calibration member.

12. (Currently Amended) A method according to claim ~~1,~~ 5, further comprising steps of:

taking, with a fiducial-mark-image taking device, ~~which takes an image of at least one fiducial mark provided on the component mounting surface of the circuit substrate,~~ an image of the first positioning reference of the calibration member, and

determining, based on the taken image of the first positioning reference, an error of a relative position between the fiducial-mark-image taking device and the calibration member.

13. (Withdrawn) An electric-component mounting system comprising:

a supporting device which supports a circuit substrate;

a supplying device which supplies at least one electric component;

a mounting device which includes a suction nozzle that receives, and holds, the electric component supplied from the supplying device, and which rotates the suction nozzle holding the electric component, to rotate the electric component, so that the electric component rotated is mounted on the circuit substrate supported by the supporting device;

a calibration member which has a support surface, and at least one first reference mark provided in vicinity of the support surface;

a calibration gauge which has at least one second reference mark and which is placed on the support surface; and

an image-taking device which takes an image of at least one third reference mark provided on the circuit substrate supported by the supporting device and which takes an

image of the first reference mark and second reference mark in a state in which the calibration gauge is placed on the calibration member.

14. (Withdrawn) A system according to claim 13, wherein the calibration member is provided at a position where the support surface thereof on which the calibration gauge is placed is positioned substantially on a plane including the component- mounting surface of the circuit substrate.

15. (Withdrawn) A system according to claim 13, wherein at least one of (a) the calibration member and (b) the calibration gauge has a corresponding one of (a) a plurality of said first reference marks that are distant from each other and (b) a plurality of said second reference marks that are distant from each other.

16. (Withdrawn) A system according to claim 13, wherein the calibration gauge has a plurality of reference holes which are formed through a thickness thereof and which provide a plurality of said second reference marks.

17. (Withdrawn) A system according to claim 13, wherein the calibration gauge has at least two groups of said second reference marks including a first group of said second reference marks that are distant from each other by a first distance, and a second group of said second reference marks which are distant from each other by a second distance different from the first distance.

18. (Withdrawn) A system according to claim 13, wherein the calibration member has an upper surface level with an upper surface of the calibration gauge, and has a plurality of said first reference marks on the upper surface thereof.

19. (Withdrawn) A system according to claim 13, wherein the calibration member has, in the support surface, at least one suction hole through which air is sucked.

20. (Withdrawn) A recording medium for recording a control program such that the control program is readable by a computer to carry out a method of detecting a position of

a rotation axis of a suction nozzle of an electric-component mounting apparatus, the suction nozzle holding, by suction, an electric component, and being rotated about the rotation axis thereof to rotate the electric component held thereby, so that the electric component rotated is mounted on a component-mounting surface of a circuit substrate, the method comprising the step of:

detecting, on a position-detecting plane including the component-mounting surface of the circuit substrate, the position of the rotation axis of the suction nozzle.

21. (Withdrawn) A control program for carrying out a method of detecting a position of a rotation axis of a suction nozzle of an electric-component mounting apparatus, the suction nozzle holding, by suction, an electric component, and being rotated about the rotation axis thereof to rotate the electric component held thereby, so that the electric component rotated is mounted on a component-mounting surface of a circuit substrate, the method comprising the step of:

detecting, on a position-detecting plane including the component-mounting surface of the circuit substrate, the position of the rotation axis of the suction nozzle.